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Statement for Management

Jewel Cave National Monument

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Definition

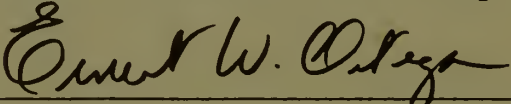
The statement for management (SFM) provides an up-to-date inventory of the park's condition and an analysis of its problems. It does not involve any prescriptive decisions on future management and use of the park, but it provides a format for evaluating conditions and identifying major issues and information voids.

Recommended by:


Dennis L. Ditmanson, Unit Manager, JECA

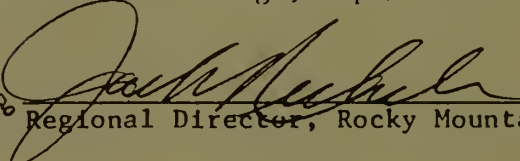
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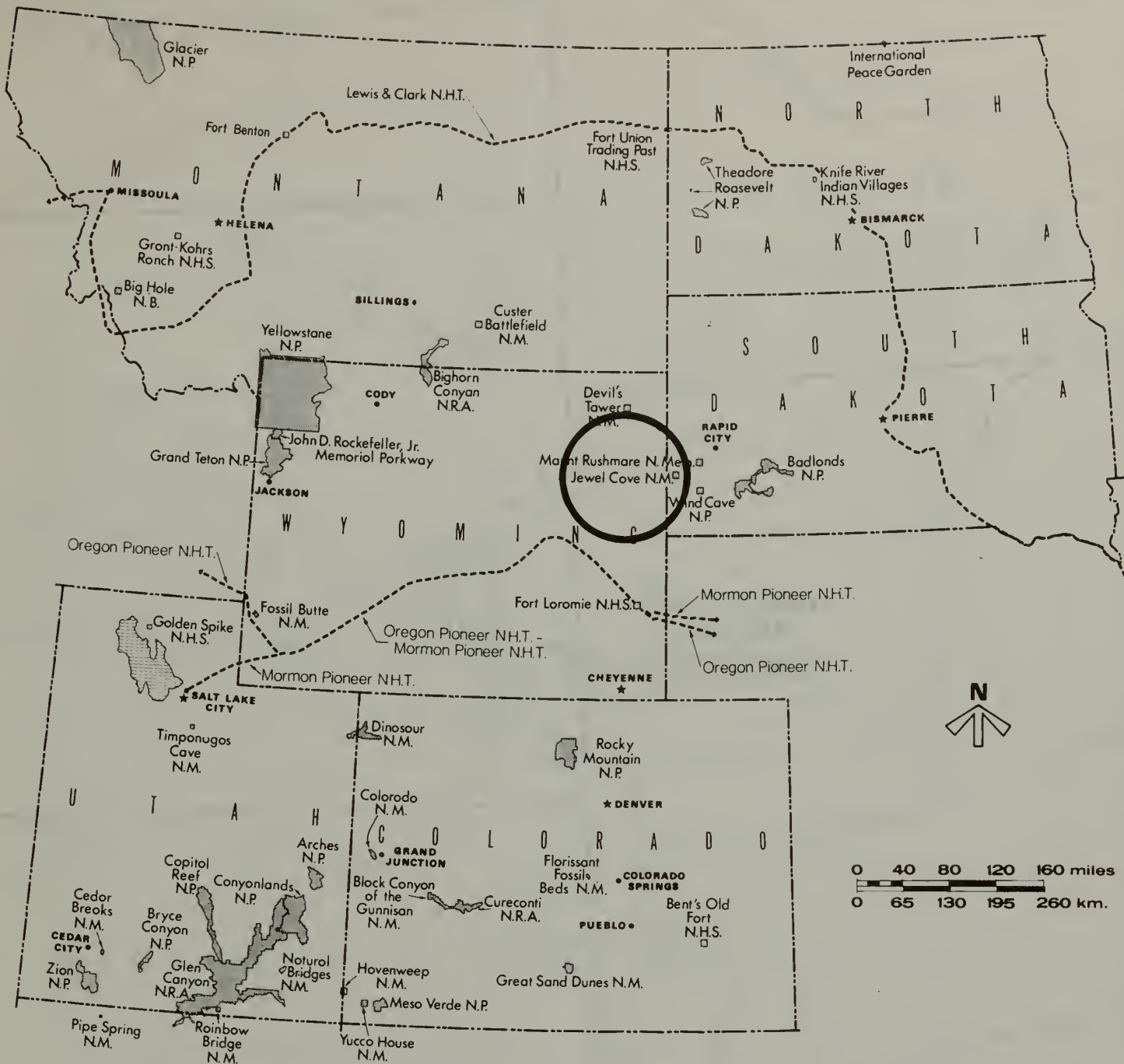

Ernest W. Ortega, Superintendent, WICA

12/22/86
Date

Approved by:


Acting Regional Director, Rocky Mountain Region

3/6/87
Date



Legend

- Locations of Major Cities
- * Locations of State Capitals

--- State Boundary Lines

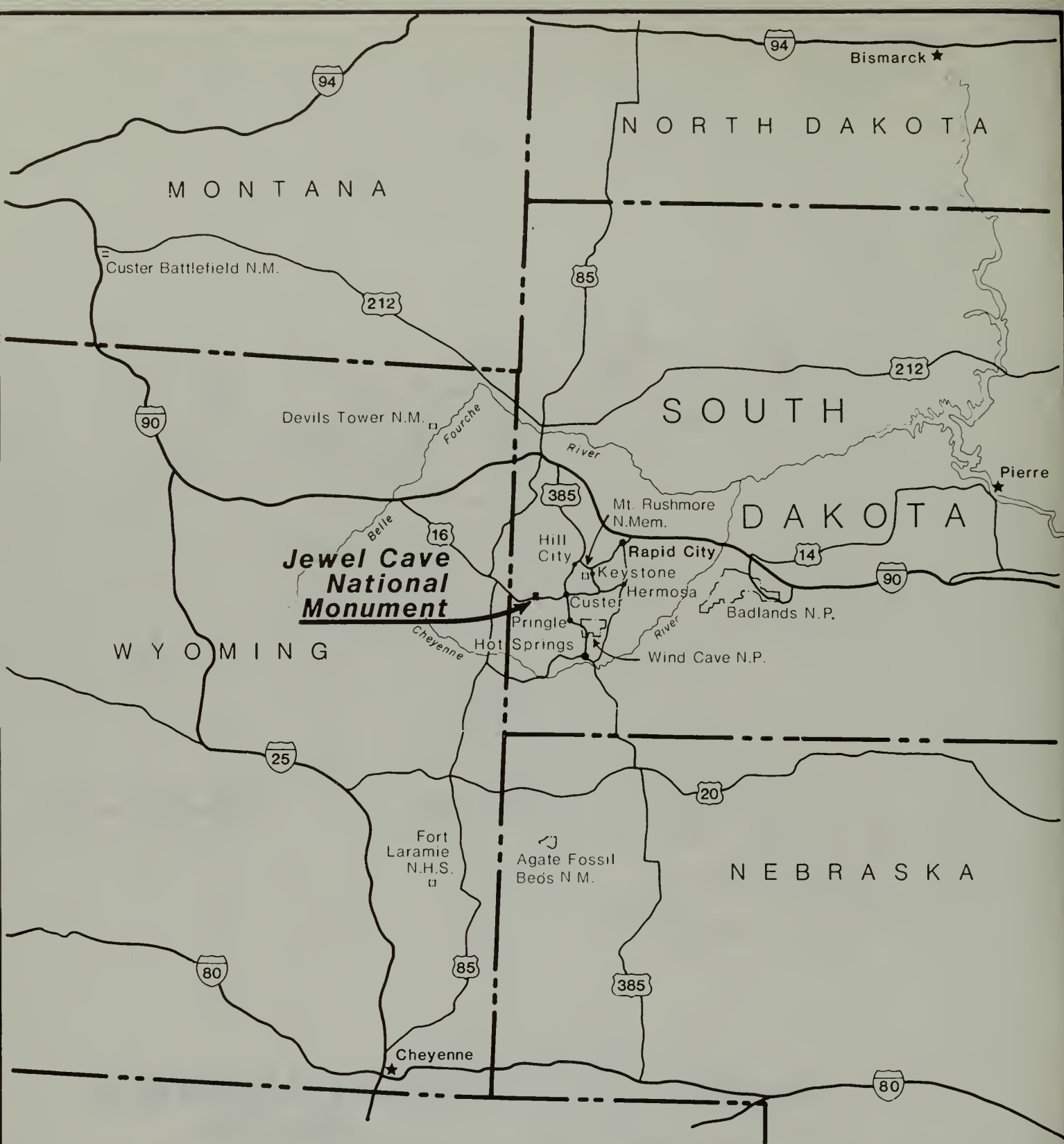
■ National Park Service Areas

--- National Park Service Historical Trails

ROCKY MOUNTAIN REGION

National Park Service

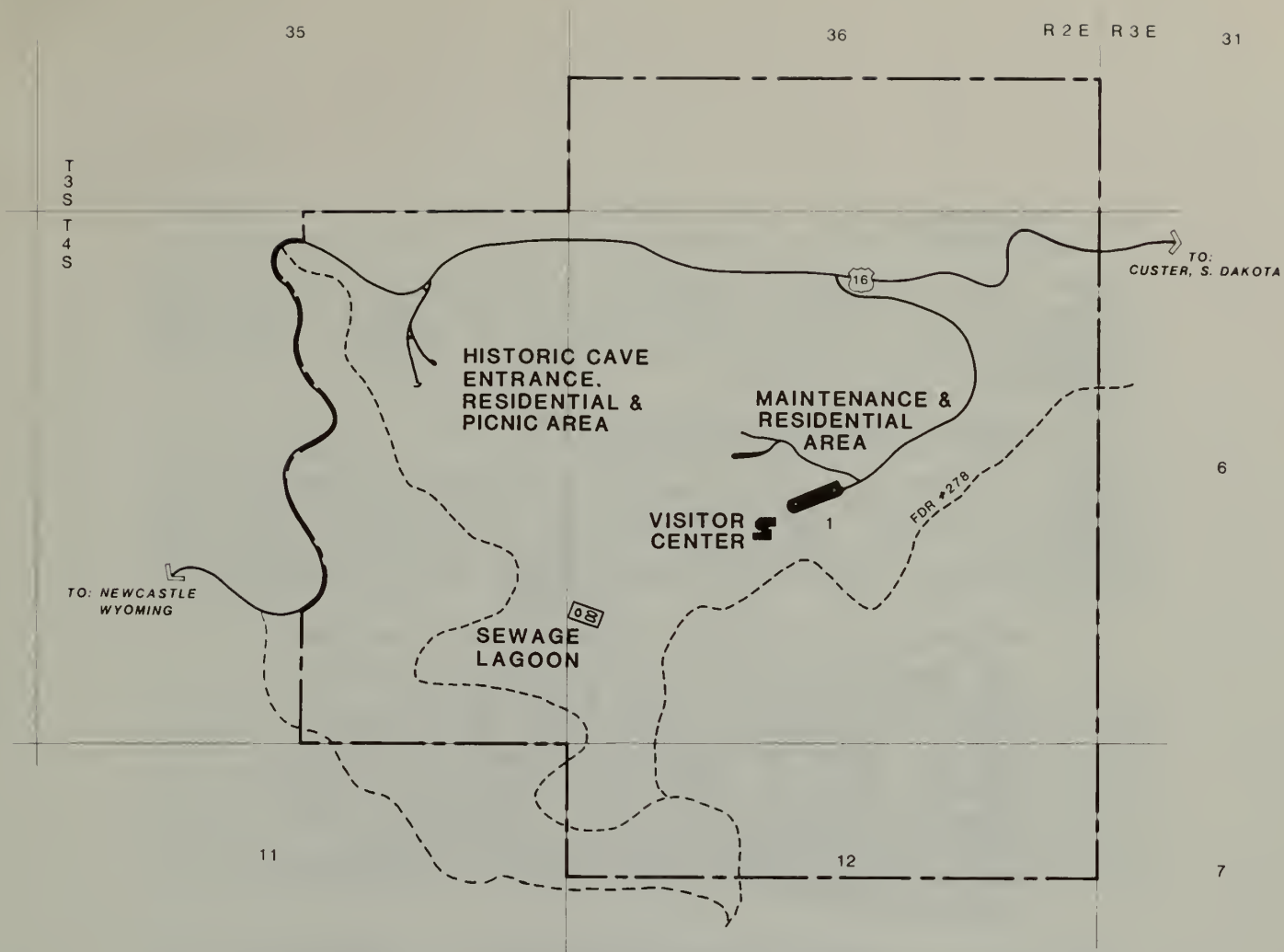
United States Department of the Interior



Vicinity Map

Jewel Cave National Monument

U.S. Dept. of the Interior - National Park Service



LEGEND

- UNPAVED ROAD
- PAVED ROAD
- - - NATIONAL MONUMENT BOUNDARY



0 1/4 1/2 MILE

BOUNDARY MAP **JEWEL CAVE NATIONAL MONUMENT - SOUTH DAKOTA** U.S. DEPT. OF THE INTERIOR - NATIONAL PARK SERVICE

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I. LOCATION

Jewel Cave National Monument is located in the western portion of Custer County, in the Black Hills of western South Dakota. The State has a single, at-large congressional district.

II. PURPOSE AND SIGNIFICANCE

Jewel Cave National Monument was created on February 7, 1908 through the action of President Theodore Roosevelt. The opening paragraph of the official Proclamation identifies the purpose of the monument.

"Whereas, the natural formation, known as the Jewel Cave, which is situated upon the public land, within the Black Hills National Forest, in the State of South Dakota, is of scientific interest, and it appears that the public interests would be promoted by reserving this formation as a National Monument, with as much land as may be necessary for the proper protection thereof;..."

The intent herein expressed was further expanded by the National Park Service Organic Act of August 25, 1916, which addressed the need to conserve park resources and to provide for the use of the monument by the visiting public. With these additions, the purpose of the Monument is well defined and further legislative action does not appear necessary.

Jewel Cave lies in the Great Plains Region - as identified in the National Park System Plan Part Two - Natural Areas, - and exemplifies two specific themes outlined in the Plan. Of primary importance, Jewel Cave is a characteristic Black Hills Cave formed by the solution of the Mississippian Pahasapa Limestone. A secondary theme delineates the typical dry, coniferous forest and woodlands which overlay the cave.

With a current known length of more than 73 miles, Jewel Cave is recognized as the second longest cave in the United States, and the fourth longest in the world. Jewel Cave is also recognized as an extremely complex, three-dimensional maze cave with the known passageways compressed under less than two square miles of surface area. As exploration activity continues, both here and in other caves of the world, the relative position of Jewel Cave may change but the unique combination of

length and complexity found here will preserve its significance as one of the premier caves of the world.

At the time of the establishment of the monument, Jewel Cave was thought to be only a small cave, but worthy of notice because of the extensive layers of calcite crystals which lined its passages. The subsequent exploration noted above, and a better scientific understanding of cave resources, have shown that while the crystal layer in itself is not as unique as once supposed, Jewel Cave is home to a number of rare types of speleothems. These include the delicate hydromagnesite balloons, and tiny, root-like structures covered with minute quartz crystals called "scintillites", the origin of which is not yet known.

Like that of the scintillites, the origin of Jewel Cave itself remains something of a mystery. With less than 2% of its known length open to the public, the bulk of the cave is held as a scientific reserve for continued study and research. This vast expanse of unspoiled, virtually untouched, yet relatively accessible cave resource serves to reinforce the original decision to preserve Jewel Cave as a National Monument.

III. INFLUENCES: INVENTORY AND ANALYSIS

A. LEGISLATIVE AND ADMINISTRATIVE REQUIREMENTS

Jewel Cave National Monument is administered under the spirit and intent of the Act of August 25, 1916, which established the National Park Service and which states the purpose of the Service to be:

"...to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

This Act, the Proclamation of 1908 already quoted, and subsequent legislation discussed below, provide direction for the preservation and protection of Jewel Cave and the surface setting, while providing for visitor access to these resources.

At the time of its establishment, Jewel Cave National Monument was administered by the U.S. Forest Service. Tours and other public programs were offered by various private parties including a group of businessmen from Custer, South Dakota and Newcastle, Wyoming. Franklin Roosevelt, through Executive Order 6166 of June 10, 1933, reorganized the Federal Government and as a result of that, Jewel Cave came under the administration of the National Park Service. No immediate operational changes occurred, however, as the private operators were allowed a phase-out period to recover the costs of their development efforts. National Park Service operation of the facility began in 1940.

Cave exploration began in earnest in 1959 and by the mid-1960's it was obvious that access to the most impressive parts of the cave were beyond the physical capabilities of most park visitors. Exploration had also proved that the bulk of the cave was outside of the surface boundaries. In 1965, a land exchange was negotiated with the U.S. Forest Service (P.L. 89-250 79 Stat. 971, October 9, 1965) which placed the surface boundaries more directly over the cave.

The exchange also provided for the development of the facilities as they exist today. Land acquisition for the monument is complete as presently authorized but the issue may require attention at some point in the future as exploration continues. As of August 6, 1986, a total of 6.55 miles, or 8.9%, of the total surveyed mileage of 73.81 miles, is located outside the surface boundary.

There are no legislative ceilings on development and a number of projects have been identified in the 10-238, line-item construction program. At the present time none of these projects is in line for funding.

<u>Pkg. #</u>	<u>Project</u>	<u>Park Priority</u>	<u>Regional Priority</u>
107	Install 2nd Elevator	1	391
111	Construct 12-unit Apartment	1	89
106	Develop Picnic Ground and Comfort Station	2	105
116	Expand Visitor Center and Shop Facility	3	402

It should be noted that the entire 10-238 program for Jewel Cave is under review. A number of smaller projects have been dropped, or will be combined with other projects. It is anticipated that a new series of projects, with new priorities, will be submitted in 1987.

The monument is a participant in a Memorandum of Understanding with the Black Hills National Forest and three other National Park Service areas. The Memorandum provides for mutual assistance on wildfires occurring within the areas of responsibility of the parties involved. The monument's area of responsibility extends for three miles beyond its boundaries. (Expires 1/89)

Black Hills Electric Cooperative holds a Special Use Permit for access to service powerlines which serve government facilities. (Expires 9/88)

Bison State Telephone Company holds a Special Use Permit to service phone lines which serve government facilities. (Expires 1/90)

Mike Wiles and Ken Allgier, local cavers trained by Herb and Jan Conn, the original explorers of Jewel Cave, hold a Special Use Permit for the purpose of exploring and mapping within Jewel Cave. Mike and Ken have been active at Jewel Cave since the late 1970's. Following an apprenticeship with the Conns, which included experiences in other Black Hills caves, they assumed responsibility for the exploration effort in 1984. The Conns continue to provide advice and counsel and Herb Conn assists with preparation of annual updates of the cave map. (Expires 12/87)

Jewel Cave National Monument has concurrent jurisdiction and has an informal agreement with the Custer County Sheriff's Office for emergency response on traffic-related problems in the western part of the county. A low-band radio containing the State's radio frequencies has been placed in the monument's patrol vehicle to facilitate this cooperation.

U.S. Highway 16 crosses the monument for a distance of about 2 miles. The monument has no maintenance or patrol responsibility for the road but works closely with the State Department of Transportation on minor cooperative efforts.

A U.S. Forest Service dirt road (FDR #178) crosses the southeast portion of the monument. The road is a public access road and creates a need for additional patrol during the hunting season.

User fees are collected for guided cave tours.

Solid waste is disposed of by contract and is deposited at an approved sanitary landfill in Rapid City.

A Concession Permit for visitor convenience items is held by the Wind Cave/Jewel Cave Natural History Association, which operates a sales branch at the monument.

Jewel Cave is managed by an onsite Unit Manager responsible to the Superintendent of Wind Cave National Park. Administrative assistance and advice on larger maintenance projects is provided by Wind Cave staff.

B. RESOURCES

The primary resource of the monument was, and continues to be, Jewel Cave itself. The previous section discusses the significance of this resource and we can only admire the foresight of those who encouraged the establishment of this area in 1907. The ongoing exploration process reinforces that vision and we anticipate that this will continue as the scientific community becomes more involved in onsite research.

The surface area is typical of the southern Black Hills region but is unique in that differing management practices are slowly distinguishing it from the neighboring national forest. The area now within the monument will gradually be returned to a more natural mix of vegetation types with a mosaic of variously-aged timber stands. The monument is in the northern plains climate zone. Average elevation is 5,400 feet. Temperatures can range from -25° to 95° or higher. Annual average precipitation is 17 inches and comes primarily in the form of spring and fall rains. The terrain is composed chiefly of hilly to mountainous slopes covered with a ponderosa pine/spruce forest. The floral and faunal communities likewise are typical of the region but a recent study has identified 393 species of plants, 7 of which are classified as occurring only rarely in South Dakota. No unique avian species are known to be present. Surface water sources are minimal but present an interesting management

challenge in that one spring was developed as a water source for Forest Service grazing leases prior to the 1965 land exchange which brought the spring into the monument. The use of this spring has continued by mutual agreement with water being piped outside the boundary to the adjoining Forest Service grazing allotment. A draft Memorandum of Understanding is being prepared to formalize this agreement. Mineral resources exist in commercial quantities near the monument but no mineral claims, or developable deposits are known to exist within the boundary. Lands within the monument, and certain adjoining tracts, have been withdrawn from mineral entry. The presence of big game species in the area, which roam freely through the Monument, creates a need for adequate fencing, proper signing, and increased patrol activity during the hunting seasons.

In 1983, a Natural and Cultural Resource Management Plan was approved for the monument. In a series of problem statements, which will be summarized below, the resource-related issues affecting Jewel Cave were identified. The salient point to emerge from this exercise was an almost universal lack of baseline information upon which to make management or planning decisions. The actions called for in the various project statements will assist in identifying specific problems for which appropriate solutions need to be found.

The areas of concern are:

JECA N-0001 Cave Management

Basic research is needed to determine the impact of visitor use and other park operations. The use of the subsurface resource as a laboratory for scientific and educational purposes should be encouraged. An expanded section dealing specifically with the cave resource will be developed for inclusion in the Resource Management Plan.

JECA N-0002 Vegetation Management

Vegetation inventories are needed to provide information regarding onsite conditions. Current objectives call for a restoration of vegetation patterns to that which may have existed prior to settlement of the Black Hills.

JECA N-0003 Boundary Management

Boundary fencing is needed to secure the area of the monument north of Highway 16 and an inquiry is needed

to identify potential actions to protect areas of the cave outside current surface boundaries.

JECA N-0004 Off-road Vehicle Management

Action is necessary to control the braiding effect along Forest Service Road FDR #278 and to control trespass activities such as hunting and wood-gathering.

JECA N-0006 Air Quality Management

Close cooperation is needed with local agencies already collecting air quality data and an awareness of activities in contiguous areas must be maintained. Jewel Cave National Monument is a Class II air quality area.

JECA N-0007 Wildlife Management

Basic data is needed to guide management action. Bats are the only wildlife visitors experience at Jewel Cave that are not commonly encountered elsewhere in the Black Hills. There is some speculation that Jewel Cave may serve as a hibernaculum for at least one endangered or threatened species of bats.

JECA N-0008 Hazard Tree Removal

Trees which pose a threat to persons or developments will be removed.

JECA N-0009 Water Resources Management

Basic research is needed to better understand the relationship between surface and subsurface water resources. Investigation is needed regarding the use of surface springs within the monument as well as non-NPS uses in adjacent watersheds which flow over known or potential caves. The first phase of a hydrological study looking into this issue was begun in 1985 and was completed in 1986. Copies are available at the park, Regional Office or at Water Resources Division, Fort Collins, Colorado. The report evaluates the water distribution within Wind Cave and Jewel Cave, evaluates human impacts upon the natural hydrological system, and documents loss of water quality and quantity as related to environment of the cave.

JECA C-0001 Cultural Resources Management

The Resource Management Plan also describes needs in the area of cultural resources, which appear to be quite limited. The Historic Ranger Cabin/Administrative Building (HS-1) is included in Category C on the List of Classified Structures. A complete survey of the area's cultural resources is

needed but the surrounding area is generally devoid of cultural material.

Studies are needed to document the role of the CCC in the early development of the area and to compile an administrative history for the monument.

C. LAND USES AND TRENDS

The monument contains 1274.56 acres within the present boundaries. No private lands are included in that total and the monument is completely surrounded by National Forest Lands at this time. Nearly 9% of the total length of the known cave is located under these adjacent Forest Service lands. Management practices such as timbering or mineral development on these adjoining areas have the potential to impact both surface and subsurface resources.

U.S. Highway 16 traverses the monument for a distance of approximately 2½ miles. A major east/west route, the road carries an annual volume of nearly 325,000 vehicles with average daily traffic counts ranging from 390 per day in January to 1844 per day in July. The monument has no responsibility for maintenance or providing law enforcement on this highway but cooperates very closely with the South Dakota Department of Transportation and the Custer County Sheriff's Office to provide emergency assistance. The portion of the highway within the monument is recognized as one of the most dangerous stretches of road in the State. During the past five years there have been a number of serious accidents in the area including five overturned tractor-trailer rigs. The Division of Transportation is currently considering alternatives for rerouting portions of the road to eliminate these hazards. Their decision may impact the monument by causing a need to relocate the present entrance area and/or lengthen the existing entrance road.

Jewel Cave is located in western Custer County, South Dakota, 13 miles west of the town of Custer, and 24 miles east of Newcastle, Wyoming. Custer is primarily a tourism-based community, while Newcastle supports an industrial, primarily energy-based, economy. Both communities are supportive of the monument and several Custer businesses have provided financial support for various special projects.

Eastern Wyoming contains extensive coal resources and development of these resources could impact the monument in several ways. A potential increase in population would affect visitation, while mining activities or a coal-burning power facility could eventually affect local air quality.

The generally mild climate and scenic beauty make the Black Hills a popular vacation site for a wide area and a stopover for a much larger audience.

The bulk of the general recreational demand is directed toward the U.S. Forest Service. Within the 1,225,000-acre Black Hills National Forest, a total of 53 campgrounds and picnic areas are available. One of these areas, Comanche Campground, is located 6 miles east of Jewel Cave, and another, the Tepee Picnic Area, is located 7 miles to the west.

Numerous private facilities and attractions have been developed throughout the Black Hills. The campgrounds and trailer parks usually have more amenities than are available at National Forest sites. The private attractions include seven cave operations which offer a variety of guided experiences.

Approximately 150,000 people live within a 150-mile radius of Jewel Cave. Rapid City is the economic hub of the region and numerous small towns are scattered throughout southwestern South Dakota, eastern Wyoming and northern Nebraska. Logging, mining, tourism, grazing and light industry provide an economic base for the region. A three-member Board of Commissioners provides governmental leadership at the county level and the Sixth District Council of Local Governments provides coordination of local and State planning within an 11-county district in western South Dakota.

Other nearby recreational parks and sites include:

- Agate Fossil Beds National Monument, Nebraska
- Angostura Lake State Recreation Area, South Dakota
- Badlands National Park, South Dakota
- Bear Butte State Park, South Dakota
- Black Hills National Forest, South Dakota/Wyoming
- Buffalo Gap National Grasslands, South Dakota
- Chimney Rock National Historic Site, Nebraska
- Custer State Park, South Dakota
- Devils Tower National Monument, Wyoming

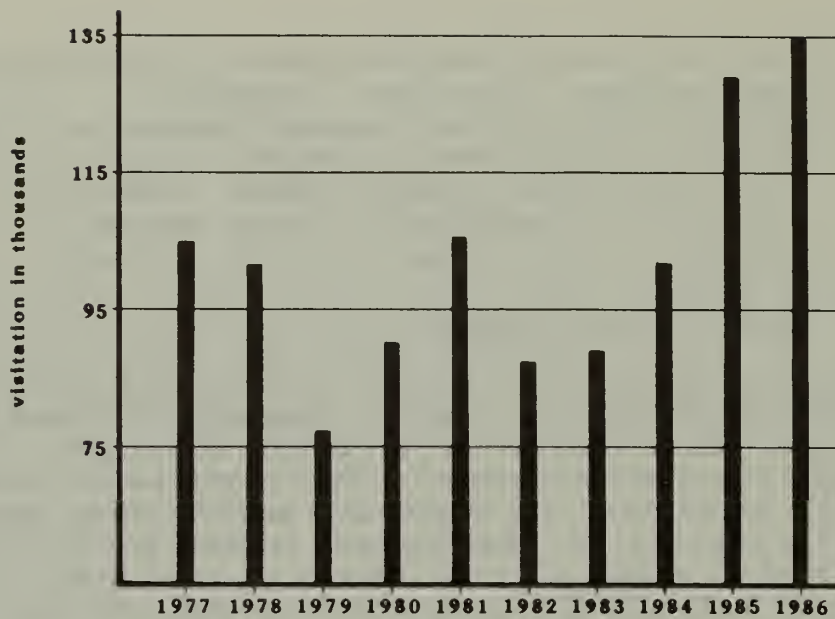
Fort Laramie National Historic Site, Wyoming
Fort Robinson State Park, Nebraska
Mammoth Site National Natural Landmark, S. Dakota
Mount Rushmore National Memorial, South Dakota
Scotts Bluff National Monument, Nebraska
Wind Cave National Park, South Dakota
Wounded Knee National Historic Landmark, S. Dakota

D. VISITOR USE ANALYSIS

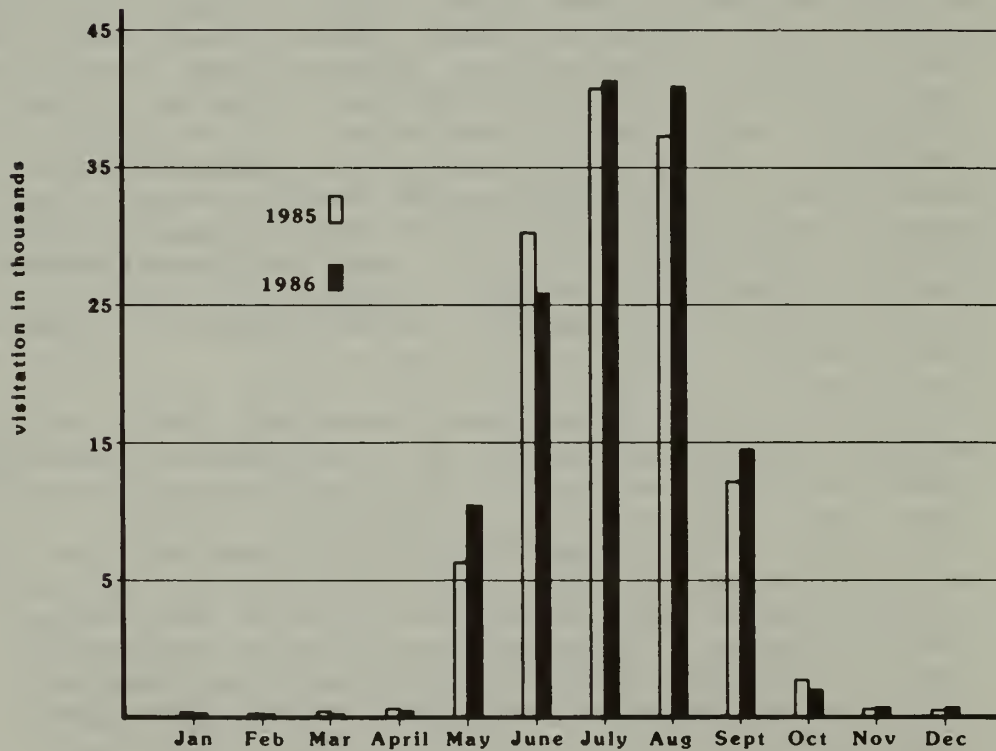
Total visitation for 1986 was 134,973 which represented a 4.57% increase over 1985. Generally, travel figures in the Black Hills were about equal to, or were slightly below last year. The increase at Jewel Cave may be attributed to a growing awareness of the cave's stature as one of the longest caves in the world, a national effort to divert visitors to the lesser-visited park areas, and a local effort to keep the media informed of activities at the monument. The total visitation in 1986 represented the busiest year in the monument's history. Over the past ten years, visitation has ranged from 77,290 in 1979, to 134,973 in 1986. As can be seen from the enclosed chart, there has been no discernible pattern, but the overall numbers generally reflect national economic trends, gas shortages, etc. As in past years, the bulk of visitor traffic is experienced during the summer months. In 1986, 81% of the visitors arrived in June, July and August, with the months of May and September accounting for an additional 19%. July was the busiest month of the year with an average daily visitation of 1331 people, while the peak day fell on August 12, 1986 with 2048 visitors.

In 1986, 66,012 visitors were provided with cave tours. During the peak of the season, mid-June to mid-August, tours were filled to capacity and mid-day visitors, those who chose to wait, experienced delays of up to two hours. At present staffing levels, the total available space on cave tours each day is 710 persons. Any day in which visitation exceeds that figure, a varying number of persons leave the area without having had the opportunity to view the principal resource. As was noted above, this situation exists for most of the visitor season.

Visitors to Jewel Cave come from every State in the Union as well as from other countries. A formal point of origin survey has not been conducted for some time but it is estimated that 15% of the visitors are from



Annual Visitation



Monthly Visitation 1985-1986
Jewel Cave National Monument

the local area or region. 84% are national and 1% are international.

The monument is a day-use area and the average visit is 2 to 2½ hours. The length of stay can vary with the type of tour experienced as well as the season. The Visitor Center is open year-round with hours ranging from 8:00 a.m. to 4:30 p.m. in the winter to 8:00 a.m. to 7:30 p.m. in the summer.

Guided cave tours are the principal visitor activity and three distinct types of tours are provided. Due to the extended waiting period for tour space, surface activities of various types are scheduled for the visitors. Included are short talks and demonstrations and short walks in the vicinity of the Visitor Center. Since camping, hiking, horseback riding, and other outdoor recreational activities are adequately provided by public and private agencies and businesses outside the monument, there is no need to detract from present programs in order to add any of those activities.

E. FACILITIES AND EQUIPMENT ANALYSIS

Development within the monument was accomplished in two phases. In the 1930's, members of the Civilian Conservation Corps constructed a 3-room ranger residence and administrative building near the natural cave entrance. They also made improvements to both the surface and in-cave trails and built a new entrance gate for the cave. Following the 1965 land exchange, extensive development occurred which opened newly-discovered cave areas to the public. Since 1972, improvements have been made to meet park housing and storage needs.

Non-historic Roads and Trails

Surfaced Roads - Primary

Entrance roads off of U.S. Highway 16 to Old and New Headquarters areas.

Total: 1.4 miles

Surfaced Roads - Secondary

Service roads to housing and maintenance areas.

Total: .4 miles

Surfaced Parking Areas

Adjacent to New Visitor Center

Total: 2 acres (approx. 12,000 sq. yds.)

Unsurfaced Roads

Access to sewer lagoon, primary reservoir, and well house.

Total: .5 miles

U.S. Forest Service Road FDR #278 which traverses the monument.

Total: 3 miles

Scenic Cave Trail

Fully developed with concrete walkways, aluminum steps - platforms - bridges - and handrails, and electric lighting.

Total: .5 miles

Surface Trails

Wood chip trails to employee housing area and Lithograph Canyon overlook.

Total: .25 miles

Historic Trails

Surface and Cave Trails

Surface trail from Ranger Cabin to Cave Entrance and two separate routes in the cave. Minimal in-cave development is limited to wooden stairs and ladders.

Total: .5 miles

Non-historic Buildings and Facilities

<u>Building Number</u>	<u>Structure</u>	<u>Date</u>	<u>Condition</u>	<u>Size (ft²)</u>
6	Visitor Center	1972	Good	8124
9	Maintenance Shop	1971	Fair	3000
11	Modular House	1978	Good	1997
12	Modular House	1978	Good	1997
20	Metal Wash House	1965	Poor	48
21	Trans-a-house	1945	Poor	521
25	Trailer House	1964	Fair	505
26	Trailer House	1964	Fair	505
27	Trailer House	1964	Fair	505
28	Wash House	1968	Poor	300
31	Mobile Home	1979	Good	837
32	Mobile Home	1979	Good	837
33	Well House	1967	Good	80
34	Mobile Home	1980	Good	837
None	Pole Barn	1984	Good	600
None	Pole Barn	1986	Good	1200
None	Metal Storage Bldg.	1965	Poor	512
HS-1	Ranger Cabin/Admin. Bldg.	1934	Fair	513

Utility Systems

Sewer Systems

New Headquarters Area - 5500 feet of main and lateral sewer lines, 26 manholes and one lift station. A one-acre treatment lagoon is divided into three cells, two of which are lined.

Old Headquarters Area - A separate sewage system, consisting of approximately 750 ft. of sewer line, two septic tanks-one 1,000-gallon and one 500-gallon-and a 75-foot by 150-foot leaching field, serve this area of the monument. The area is used on a seasonal basis only.

Water Systems

A single water system serves the entire monument. At present water is pumped from a 720-foot well into a 3,000-gallon sump where chlorination takes place. A secondary pump then moves the water to a 100,000-gallon reservoir overlooking the new headquarters area where gravity is used to move water through the system. The water line to the old headquarters area feeds directly from the line to the reservoir. Total length of water line is approximately 7,600 feet, ranging in size from 6 inches to 3/4 inches.

In 1984 a second well was drilled to a depth of 810 feet. Funding to tie this well into the system was approved and work began in the fall of 1986.

Electric Systems (two)

Surface - owned and maintained by Black Hills
Electric Cooperative

Cave - owned and maintained by the National Park Service. Includes three 15-kw transformers, eighteen mercury vapor light fixtures (300w-1,000w), 105 incandescent light fixtures (75w-150w), and approximately one mile of primary and secondary wiring.

Boundary Fence

Approximately 4 miles of a proposed 6.5 miles of fencing is in place, consisting of three-strand barbed wire. This includes all the area south of U.S. Highway 16.

Grounds

Approximately 2 acres of lawns are maintained throughout the monument.

Radio System

170.050 MHz with 103.50 Hz Channel Guard

- 65 watt base station
- 5 base station remotes
- 3 mobile units
- 12 hand-held portable units
- 3 vehicle chargers
- 1 5-unit wall charger
- 1 10-unit wall charger
- 1 mobile unit - SD state radio frequencies

Phone System

Mitel SX-10E telephone communications with central console and multiple extension capability. Twenty-five extensions are currently in use. Phone sets are also NPS-owned.

System is maintained under an annual agreement with Bison State Telephone Company, Custer, South Dakota.

Equipment and/or Vehicles

Bobcat Model 440 - Frontend Loader/Backhoe - 1984 - Fair Condition.

Cushman Utility Vehicle - enclosed body - 1983 - Fair Condition.

4x2 Chevrolet 3/4-ton Pickup with dump box and stake bed - 1979 - Poor Condition.

4x4 Chevrolet 1-ton truck with utility box - 1979 - Fair Condition.

4x2 Chevrolet Sedan Delivery - 4-door - 1982 - Good Condition.

Ford Pinto - 3-door hatchback - 1978 - Fair Condition.

International Harvester, self-propelled snow blower - 1984 - Good Condition.

3-ton Utility Trailer - tandem wheels - 1984 - Good Condition.

Fire Pumper - 200-gallon - 1985 - Good Condition.

Fire Pumper - 150-gallon - Fair Condition.

GSA vehicles are utilized on an as-needed basis for seasonal project work.

Auxiliary power plant - military surplus - Poor Condition.

F. STATUS OF PLANNING

<u>Name of Plan/Study</u>	<u>Preparer</u>	<u>Date Approved</u>	<u>Comment on Adequacy</u>	<u>Repository</u>
Master Plan	WODC	3/62	Obsolete	DSC
Interpretive Prospectus	HFC	3/66	Obsolete	DSC
Resource Management Plan	Park	9/83	Current	Park
Archeological Survey	MWAC	-	Incomplete	-
Housing Management Plan	Park	-	Draft	Park
Fire Management Plan	Park	-	Draft	Park
Documented Safety Plan	Park	8/85	Current	Park
Scope of Collection Statement	Park	3/86	Current	Park
Physical Security/ Emergency Response Plan	Park	1987	Obsolete	Park

G. EXISTING MANAGEMENT ZONING

Jewel Cave National Monument contains a total of 1274.56 acres and is primarily categorized as a natural zone. The subsurface resource is included as the outstanding natural feature requiring management action. This natural zone contains approximately 1224 acres.

The park development zone includes the Visitor Center, parking areas, the maintenance shop, housing areas, access roads, historic entrance, and utility area. The development zone includes approximately 51 acres.

IV. MAJOR ISSUES

The principal issue facing Jewel Cave is the lack of a current General Management Plan and Interpretive Prospectus. Since the existing plans are obsolete, they are of no use in directing management action, but more importantly, the absence of up-to-date plans virtually assures that no development action will occur at this location. A number of projects have been identified via the 10-238 process, including a second elevator, expansion of the Visitor Center, surface trails, a picnic area with comfort station, etc., but none has received a servicewide priority listing. All possible means of completing these crucial plans should be investigated.

The potential rerouting of U.S. Highway 16 through the monument requires periodic attention. The project is planned in three segments. The first, dealing with that portion of the road from four miles west of Custer to a point one mile east of the monument is scheduled to begin in 1988. The second section will cover the Hell Canyon portion of the road and will directly impact the monument. Present thinking calls for a major bridge project to span the canyon a short distance north of the monument. This would require a rerouting of Highway 16 to the north. Access to the monument would require the use of approximately one-and-a-half miles of old Highway 16, at a minimum, and may place a substantial additional maintenance responsibility on the monument. Work on this segment of the project is tentatively programmed for 1992 but as yet no public hearings have been scheduled. In addition to the points discussed above, there are also environmental concerns regarding the impact of the construction activity on the cave resource. These

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CAVE ENTRANCE,
RESIDENTIAL &
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RESIDENTIAL AREAVISITOR
CENTERSEWAGE
LAGOON

D.R.

FDR # 278

TO:
CUSTER, S. DAKOTATO: NEWCASTLE
WYOMING




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12

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LEGEND

- UNPAVED ROAD
- PAVED ROAD
- NATIONAL MONUMENT BOUNDARY
- T — BISON STATE TELEPHONE CO.-
BUIRED CABLE
- P --- BLACK HILLS ELECTRIC COOPERATIVE
POWER LINE
-  NATURAL ZONE (97% OF MONUMENT SURFACE)
-  DEVELOPMENT ZONE (3% OF MONUMENT SURFACE)
-  SUBSURFACE RESOURCE



0 1/4 1/2 MILE

EXISTING MANAGEMENT ZONING

JEWEL CAVE NATIONAL MONUMENT - SOUTH DAKOTA

UNITED STATES DEPARTMENT OF THE INTERIOR - NATIONAL PARK SERVICE

146	80,017
2-87	RMRO

include the potential for direct damage from blasting and related actions as well as indirect impacts resulting from changes in drainage patterns, increased pollutants, etc. The third segment of the project will cover that portion of the road from west of the monument to the Wyoming state line.

Research activities at the monument have been very minimal but discussions are underway regarding the role of the Research Biologist at Wind Cave which may serve to focus more attention on Jewel Cave. Preliminary investigations in the cave, coupled with the ongoing exploration work serve to emphasize the extent and complexity of this resource. In cooperation with Wind Cave, a Cave Management Plan is being developed which will serve to identify and direct future research needs. Completion of this plan will allow for a much more systematic approach to understanding and managing this unique resource.

As exploration continues to push the limits of the cave farther beyond the surface boundaries, even closer attention will need to be paid to activities on adjoining lands. The GMP-DCP process will address future protection needs on these adjacent lands, including alternatives ranging from easements and protection zones, to acquisition of these areas overlaying the cave. At present, we enjoy a very cordial relationship with the U.S. Forest Service and the maintenance of that atmosphere should remain a high priority. On a related issue, there appears to be renewed interest in exploration of Jasper Cave, located immediately to the west of the present monument, and within the original (pre-1965) boundary. There is a high probability that the two caves are connected and we have had some very preliminary discussions with the Forest Service regarding future management of Jasper Cave.

Relationships with the seven private cave operations in the Black Hills have been mixed at best. The issue of unfair competition appears to be the principal difference of opinion but continued effort should be made to open and maintain lines of communication. Some small gains have been made this year as two of the operations participated in our seasonal orientation program and another utilized our orientation packet to develop a similar item for their staff.

Jewel Cave is, of course, the resource for which Jewel Cave National Monument was established. Unlike many other National Park Service areas, it is not possible for our visitors to experience this resource without the presence of uniformed employees. The reasons for this situation include both visitor safety and resource protection considerations. In 1986, 134,973 people visited the monument, but only 66,012 could be accommodated on cave tours. Informal surveys revealed that on some days more than 400 people specifically asked for tickets only to be told that tours were already full for the day. The cost effectiveness of the tour operation has already been proven, with every dollar applied to interpretive services returning slightly more than two dollars in revenue. On this basis, additional funding for the interpretive programs should be a major consideration. Another alternative would suggest legislation which would permit the return of user fees directly to the park areas in which they were collected for use in funding park operations. Other visitor use issues include working with local businesses to extend the visitor season into the spring and fall, and expanding utilization of the monument by school groups.

When development of the new headquarters area began in the 1960's, a one-acre sewage lagoon, divided into two cells was installed. The lagoon overlays a portion of the cave. It soon appeared that the design of the lagoon was too large for the amount of waste generated by the monument so one of the cells was subdivided into a smaller area of approximately one-eighth-acre. This cell usually stayed full and overflowed into the larger portion during the summer months. Subsequent investigation proved that the lagoons were actually leaking into the cave system, so in 1985 they were redesigned into two one-quarter-acre cells, which were lined with Hypalon, and one one-half-acre cell which was left unlined. By June of 1986, the two lined cells were full and were overflowing into the unlined cell. Consideration must now be given to the necessity for further remedies. The Regional maintenance staff has been supportive of solutions to this problem, which will be addressed in the cyclic and repair/rehab program in FY 87.

The question of employee housing will require some attention in the future. A long-standing development package proposes to build a 12-unit apartment complex to replace the present collection of temporary structures and trailers. The recently submitted

Housing Management Plan proposes another solution via the use of modular apartment units which could be phased in over a ten-year period. Overall costs would be similar but would be spread over the longer period.

Senate Bill S-1453, which was addressed in the Statement for Management for Wind Cave National Park, calls for the establishment of a "Sioux National Park" to be administered by the Sioux Nation. Like the other Federal lands in South Dakota, Jewel Cave would be included in this proposal.

V. MANAGEMENT OBJECTIVES

A. GENERAL

1. To provide management direction for the monument to ensure that programs and services provided to the public, and maintenance and resource management activities, are performed in accordance with the basic mission of Jewel Cave National Monument.
2. To support cooperative activities with park neighbors, other business and civic organizations, and local, State and Federal agencies, which enhance the area's ability to accomplish its mission.
3. To maintain a management environment that is supportive of all employees in the accomplishment of their tasks.
4. To increase staff efficiency through the use of ADP systems as they can be acquired.

B. INTERPRETATION

1. To provide park visitors with a variety of opportunities to view the cave resource on well-informed, well-presented cave tours, which enhance visitor appreciation of that resource as well as generate support for National Park Service programs in general.
2. To maximize the support of the Wind Cave/Jewel Cave Natural History Association through an active publication and sales program, and to maximize support for the Association through staff training, the use of position description and performance standards, promote familiarity by park staff and on-going, open communications.

3. To seek innovative ways to increase the area's capability of providing quality programs both during the heavy use season, and for such activities as school groups during the remainder of the year.
4. To protect park resources and visitors alike, through an active program of safety information.

C. RESOURCES

1. To maintain the majority of the cave system as an undeveloped primitive area for scientific research and to encourage use of the area by university groups, independent researchers, students, and professional caving organizations.
2. To preserve and protect the natural systems which exist in Jewel Cave by allowing for minimal visitor access and ensuring close coordination when planning both subsurface and surface developments.
3. To encourage research activities both surface and subsurface, so as to initiate, and enhance the process of building a data base of scientific information about the monument's resources.
4. To conserve and perpetuate native flora and fauna in as near a pristine condition as possible.
 - a. To recognize and manage fire as a management tool.
 - b. To encourage the proliferation of native plants and animals through appropriate programs for the control of exotic species.
5. To develop appropriate action plans to direct research activities, emergency response activities and other resource related programs.
6. To research the cultural history of the monument and provide for the preservation of such resources as may be deemed significant.

D. MAINTENANCE

1. To maintain all monument roads, buildings and other facilities in a manner that will ensure a safe visit for travelers, a safe work environment for employees and perpetuate the life of the physical plant.
2. To coordinate with Wind Cave and Regional staff in the implementation of a maintenance management system for the monument.
3. To maintain up-to-date project listings, to maximize use of such programs as cyclic maintenance and lump sum constructions.

JEWEL CAVE NATIONAL MONUMENT

SOUTH DAKOTA

By the President of the United States of America

A Proclamation



WHEREAS, the natural formation, known as the Jewel Cave, which is situated upon the public land, within the Black Hills National Forest, in the State of South Dakota, is of scientific interest, and it appears that the public interests would be promoted by reserving this formation as a National Monument, with as much land as may be necessary for the proper protection thereof;

Now, therefore, I, THEODORE ROOSEVELT, President of the United States of America, by virtue of the power in me vested by section two of the Act of Congress, approved June eighth, nineteen hundred and six, entitled, "An Act For the preservation of American antiquities," do proclaim that there are hereby reserved from settlement, entry, and all forms of appropriation under the public land laws, subject to all prior valid adverse claims, and set apart as a National Monument, all the tracts of land, in the State of South Dakota, shown as the Jewel Cave National Monument on the diagram forming a part hereof.

The reservation made by this proclamation is not intended to prevent the use of the lands for purposes consistent with the withdrawal made by this proclamation, or for forest purposes under the proclamation establishing the Black Hills National Forest, but the two reservations shall both be effective on the land withdrawn, but the National Monument hereby established shall be the dominant reservation.

Warning is hereby given to all unauthorized persons not to appropriate, injure, or destroy any feature of this National Monument or to locate or settle upon any of the lands reserved by this proclamation.

In Witness Whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

DONE at the City of Washington this 7th day of February,
in the year of our Lord one thousand nine hundred and
eight, and of the Independence of the United States
the one hundred and thirty-second.

[SEAL.]

THEODORE ROOSEVELT

By the President:

ELIHU ROOT

Secretary of State.

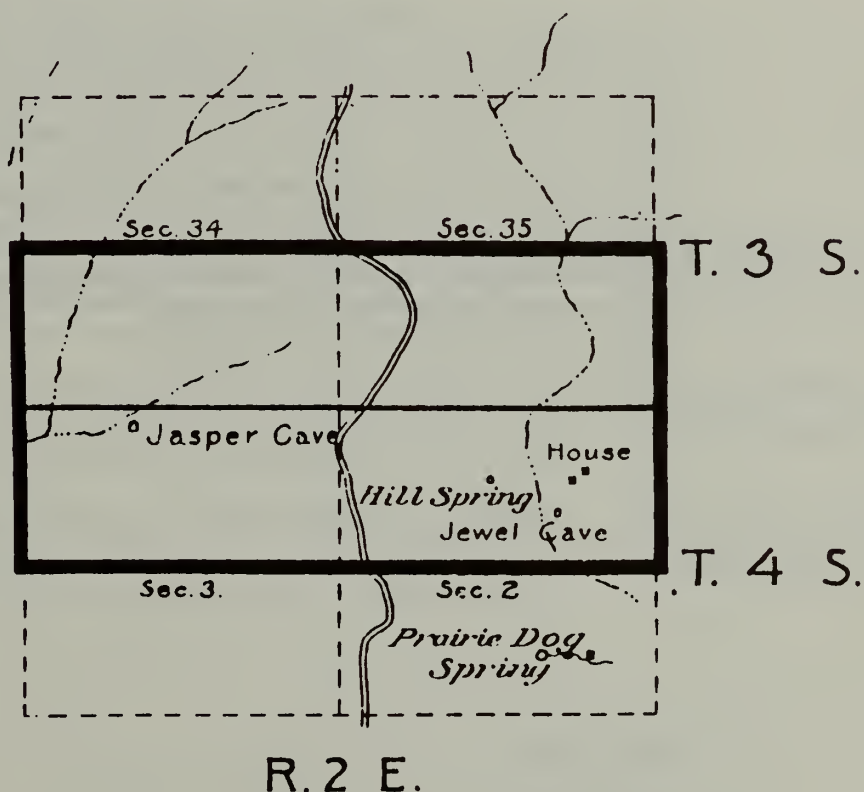
[No. 799.]

JEWEL CAVE NATIONAL MONUMENT

WITHIN BLACK HILLS NATIONAL FOREST
SOUTH DAKOTA

BLACK HILLS MERIDIAN AND BASE
FOREST SERVICE, U. S. DEPT. OF AGRICULTURE
1908

—— NATIONAL MONUMENT BOUNDARY



[DIAGRAM FORMING A PART OF PROCLAMATION
DATED FEBRUARY 7, 1908.]



Public Law 89-250
89th Congress, H. R. 9417
October 9, 1965

An Act

79 STAT. 971

To revise the boundary of Jewel Cave National Monument in the State of South Dakota, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, for the purpose of including within the Jewel Cave National Monument significant caverns and other geological features beneath lands within the Black Hills National Forest adjacent to the national monument the boundary of said monument is hereby revised in accordance with drawing numbered N.M.-J.C.-7100, dated June 10, 1964, prepared by the National Park Service of the Department of the Interior. Lands within the revised monument shall hereafter be administered in accordance with the Act of Congress entitled "An Act to establish a National Park Service, and for other purposes," approved August 25, 1916 (39 Stat. 535), as amended and supplemented. Lands excluded from the monument pursuant to this Act shall remain and be administered as a part of the Black Hills National Forest.

Jewel Cave National Monument,
S. Dak.

16 USC 1 et seq.

Approved October 9, 1965, 6:35 a.m.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 981 (Comm. on Interior & Insular Affairs).
SENATE REPORT No. 766 (Comm. on Interior & Insular Affairs).
CONGRESSIONAL RECORD, Vol. 111 (1965):
Sept. 20: Passed House.
Sept. 23: Considered and passed Senate.

CHAPTER 8

(S.B. 116)

JURISDICTION OVER CERTAIN LANDS CEDED
AND ACCEPTED FROM FEDERAL GOVERNMENT

AN ACT

ENTITLED, An Act to cede concurrent jurisdiction to the United States over national park and monument land and to accept such jurisdiction over certain federal lands used for park and monument purposes.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF SOUTH DAKOTA:

Section 1. Concurrent jurisdiction over crimes and offenses under the laws of the state of South Dakota is hereby ceded to the United States over and within all the territory dedicated to national park, national memorial and national monument purposes included in the tracts of land in South Dakota designated as:

- (1) Mount rushmore national memorial;
- (2) Badlands national park;
- (3) Wind cave national park;
- (4) Jewel cave national monument.

Section 2. The concurrent jurisdiction ceded by section 1 of this Act shall be vested upon acceptance by the United States by and through its appropriate officials and shall continue so long as the lands within the designated areas are dedicated to park purposes.

Section 3. The consent of the state is hereby given to the retrocession of exclusive jurisdiction by the United States over lands owned by the United States within the boundaries of badlands national park. The Governor may accept retrocession of jurisdiction for the state.

Section 4. Upon the establishment of concurrent jurisdiction, the appropriate county sheriffs with the approval of the appropriate state's attorneys will develop memoranda of agreement with the park superintendents of the national park service areas in South Dakota.

Signed February 27, 1980

JEWEL CAVE NATIONAL MONUMENT

SEPTEMBER 22 (legislative day, SEPTEMBER 20), 1965.—Ordered to be printed

Mr. McGOVERN, from the Committee on Interior and Insular Affairs,
submitted the following

REPORT

[To accompany H.R. 9417]

The Committee on Interior and Insular Affairs, to which was referred the bill (H.R. 9417) to revise the boundary of Jewel Cave National Monument in the State of South Dakota, and for other purposes, having considered the same, reports favorably thereon without amendment and recommends that the bill do pass.

PURPOSE

The purpose of H.R. 9417, a companion measure to S. 2812, introduced by Senator McGovern on June 23, 1965, is to revise the boundaries of the Jewel Cave National Monument, S. Dak., by transferring approximately 1,120 acres of land which are now within the monument to the Black Hills National Forest and by adding to the monument a comparable acreage which is now within the national forest.

NEED

Jewel Cave National Monument was established by Executive order in 1908. It contains 1,275 acres in all. The land adjacent to it in the Black Hills National Forest has been found to be underlain by caverns which are of great scientific and public interest. The formation in these caverns include two that are unique—scintillites, which were described to the committees as “quartz bodies which have been dissolved and reformed into a material which, in both color and form, resembles a bowlful of spaghetti or coral,” and hydromagnesite bubbles, which are “small translucent sacs of mineral deposits formed on calcite popcorn.” Enactment of H.R. 9417 is needed in order to permit the new area to be opened up and made accessible to visitors as a part of the national monument. At the same time, the relinquishment to Forest Service control of approximately the same acreage now

within the national monument will relieve the National Park Service of responsibility for administering land which is of no great importance for its purposes.

The long-range development plans of the National Park Service for the revised Jewel Cave National Monument include providing a 3/4-mile access road and parking area, elevators, an emergency exit tunnel, underground lighting, a visitors' center, employees' quarters, and related facilities. The total cost of these installations is estimated at about \$1,646,000.

Entrance fees are being and will be charged for admission to Jewel Cave as provided in the Land and Water Conservation Fund Act. During 1964, 55,000 persons visited the area. With increased accessibility and the revision of the boundaries of the national monument, as provided in H.R. 9417, this figure is expected to increase to 200,000 annually.

COST

Enactment of H.R. 9417 will entail no additional authorization of appropriations and, by itself, no cost to the Government. Expenses incurred for the improvements referred to above will come from the regular appropriations for carrying on the work of the National Park Service.

DEPARTMENT RECOMMENDATIONS

The favorable reports of the Department of the Interior and the Department of Agriculture are set forth below.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., August 16, 1965.

HON. WAYNE N. ASPINALL,
*Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D.C.*

DEAR MR. ASPINALL: Your committee has requested a report on H.R. 9417, a bill to revise the boundary of Jewel Cave National Monument in the State of South Dakota, and for other purposes.

We recommend that the bill be enacted.

H.R. 9417 revises the boundary of the Jewel Cave National Monument, which was established by Presidential proclamation on February 7, 1908 (34 Stat. 2480), and which consists of about 1,275 acres of land within the Black Hills National Forest. The proposed boundary revision, as shown on the map referred to in the bill, will add lands to, and exclude lands from, the national monument. The total amount of land within the national monument, however, will remain at approximately 1,275 acres.

Recent exploration has uncovered over 13 miles of hitherto unknown caverns in the Jewel Cave vicinity. The newly discovered sections contain numerous formations of scenic and scientific interest. Among them are two unique mineral deposits—scintillites and hydromagnesite bubbles. Scintillites are quartz bodies which have been dissolved and re-formed into a material resembling a bowlful of spaghetti or coral in both color and form. They have a drusy quartz appearance which gives a dazzling sparkle to the formation. The hydromagnesite "bubbles" are small translucent sacs of mineral deposit formed on

some calcite popcorn. Experts are still puzzled as to how they are formed; it appears that they have not been previously described.

The large rooms and passageways with a coating of large calcite crystals and delicate dripstone formations in recently discovered sections give Jewel Cave a much greater significance. Here may be found rooms as large as 100 to 150 feet in length, with ceilings 75 feet high. Dogtooth spar lines vugs - the jewels from which the cave derives its name - are displayed in breathtaking fashion. An unusual geologic story is exhibited in several flowstone and dripstone formations which were at one time fractured, probably by an earthquake, and later "healed" by additional deposition. Other interesting new features found in the cave are hollow stalagnites. These standing columns covered with a coating of popcorn calcite are not commonly found in other caves in the country. These and other features occur in abundance and in many colors which makes Jewel Cave a fascinating attraction.

At the present time, the new portions of the cave can only be entered by those expert in cave exploration. With the cooperation of the Department of Agriculture, test holes have been drilled and suitable locations for an elevator shaft and a tunnel entry have been selected.

Since the boundary revision proposed under H.R. 9417 encompasses Federal lands within the Black Hills National Forest, no land acquisition cost would be attributable to this legislation. Lands excluded from the national monument, amounting to about 1,120 acres, will remain and be administered as part of the national forest.

Since the newly discovered portions of Jewel Cave cannot be reached by the general public from the present entrance, developments are required. Based on current estimates and assumptions, the development costs will be approximately \$1,645,700. Under a memorandum of understanding entered into by the Forest Service, Department of Agriculture, and the National Park Service of this Department on February 9, 1965, pursuant to the act of August 7, 1946 (60 Stat. 885), \$660,100 of the estimated development costs have been appropriated to date. Annual operating costs presently amount to about \$35,000, and we estimate that when the new development is completed these costs will be approximately \$95,000.

The Bureau of the Budget has advised that there is no objection to the presentation of this report from the standpoint of the administration's program.

Sincerely yours,

STANLEY A. GAIN,
Assistant Secretary of the Interior.

DEPARTMENT OF AGRICULTURE,
Washington, D.C., September 10, 1965.

HON. WAYNE N. ASPINALL,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives.

DEAR MR. CHAIRMAN: This is in response to your request of July 29, 1965, for a report on H.R. 9417, a bill to revise the boundary of Jewel Cave National Monument in the State of South Dakota, and for other purposes.

We recommend that this bill be enacted.

H.R. 9417 would revise the boundaries of the Jewel Cave National Monument, established by Proclamation 799 of February 7, 1908 (35 Stat. 2180), to include within it significant caverns and other geological features which now underlie national forest lands within the Black Hills National Forest. Lands in the revised monument would be administered by the National Park Service in accordance with the act of August 25, 1916 (39 Stat. 535), as amended and supplemented. Lands excluded from the monument would remain and be administered as part of the Black Hills National Forest. The revised boundaries would be those shown on drawing No. N.M.-J.C.-7100 dated June 10, 1964, and on file in the National Park Service of the Department of the Interior.

The present national monument includes 1,274.56 acres, being the S½ sec. 34 and S½ sec. 35, T. 3 S., R. 2 E., and N½ sec. 2 and N½ sec. 3, T. 4 S., R. 2 E., Black Hills base and meridian. These lands are reserved also for national forest purposes, but the withdrawal as a national monument is the dominant reservation. Since 1933, the monument has been administered by the National Park Service.

The effect of the revision provided by H.R. 9417 will be to move the monument east and south to include the S½S½ sec. 36, T. 3 S., R. 2 E., and sec. 1, SE¼ and part of NE¼ sec. 2, and N½N½ sec. 12, T. 4 S., R. 2 E.--about 1,275 acres.

Recent explorations of the caves which supposedly underlie the Jewel Cave National Monument indicate that the principal caverns lie to the east and south of most of the monument as established by the 1908 proclamation and are within the revised boundaries as set forth on the drawing noted in H.R. 9417. National Park Service investigations also show that the most favorable locations for entrance points to the caves and for facilities and structures for the accommodation of visitors and administration of the national monument are in Lithograph Canyon, within sec. 1 T. 4 S., R. 2 E. Revision of the national monument boundary as proposed in the bill therefore would assure that the monument encompasses the area traversed by the caves and would facilitate development and administration of them.

The lands within both the present monument and the proposed revision are owned by the United States, having been reserved from the public domain. Both areas are timbered, largely with ponderosa pine. Timber in the present monument area is mostly old growth. The lands within the proposed revision support well-stocked, pole-size stands mostly. Grazing values are small and the revision would have no significant impact on national forest grazing permittees. The Forest Service would resume the administration of the lands excluded from the present monument by the revision with full regard

for their proximity to the revised monument area and public use thereof.

We believe that enactment of H.R. 9417 will promote more effective and efficient use of both the underground caverns, which are of public and scientific interest, and of the timber and other surface resources.

The Bureau of the Budget advises that there is no objection to the presentation of this report from the standpoint of the administration's program.

Sincerely yours,

ORVILLE L. FREEMAN,
Secretary.

COMMITTEE RECOMMENDATION

The Committee on Interior and Insular Affairs recommends the enactment of H.R. 9417.

REVISING THE BOUNDARY OF JEWEL CAVE NATIONAL MONUMENT, S. DAK.

SEPTEMBER 13, 1965.—Committed to the Committee of the Whole House on the
State of the Union and ordered to be printed

Mr. RIVERS of Alaska, from the Committee on Interior and Insular
Affairs, submitted the following

REPORT

[To accompany H.R. 9417]

The Committee on Interior and Insular Affairs, to whom was
referred the bill (H.R. 9417) to revise the boundary of Jewel Cave
National Monument in the State of South Dakota, and for other
purposes, having considered the same, report favorably thereon
without amendment, and recommend that the bill do pass.

PURPOSE

The purpose of H.R. 9417, by Congressman Berry, is to revise
the boundaries of the Jewel Cave National Monument, S. Dak., by
transferring approximately 1,120 acres of land which are now within
the monument to the Black Hills National Forest and by adding to the
monument a comparable acreage which is now within the national
forest.

NEED

Jewel Cave National Monument was established by Executive
order in 1908. It contains 1,275 acres in all. The land adjacent to
it in the Black Hills National Forest has been found to be underlain
by caverns which are of great scientific and public interest. The
formation in these caverns include two that are unique - scintillites,
which were described to the committees as "quartz bodies which have
been dissolved and reformed into a material which, in both color and
form, resembles a bowlful of spaghetti or coral," and hydromagnesite
bubbles, which are "small translucent sacs of mineral deposits formed
on calcite popcorn." Enactment of H.R. 9417 is needed in order to
permit the new area to be opened up and made accessible to visitors

as a part of the national monument. At the same time, the relinquishment to Forest Service control of approximately the same acreage now within the national monument will relieve the National Park Service of responsibility for administering land which is of no great importance for its purpose.

The long-range development plans of the National Park Service for the revised Jewel Cave National Monument include providing a 3/4-mile access road and parking area, elevators, an emergency exit tunnel, underground lighting, a visitors' center, employees' quarters, and related facilities. The total cost of these installations is estimated at about \$1,646,000.

Entrance fees are being and will be charged for admission to Jewel Cave as provided in the Land and Water Conservation Fund Act. During 1964, 55,000 persons visited the area. With increased accessibility and the revision of the boundaries of the national monument, as provided in H.R. 9417, this figure is expected to increase to 200,000 annually.

COST

Enactment of H.R. 9417 will entail no additional authorization of appropriations and, by itself, no cost to the Government. Expenses incurred for the improvements referred to above will come from the regular appropriations for carrying on the work of the National Park Service.

DEPARTMENT RECOMMENDATIONS

The favorable reports of the Department of the Interior and the Department of Agriculture are set forth below.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., August 16, 1965.

HON. WAYNE N. ASPINALL,
*Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D.C.*

DEAR MR. ASPINALL: Your committee has requested a report on H.R. 9417, a bill to revise the boundary of Jewel Cave National Monument in the State of South Dakota, and for other purposes.

We recommend that the bill be enacted.

H.R. 9417 revises the boundary of the Jewel Cave National Monument, which was established by Presidential proclamation on February 7, 1908 (34 Stat. 2180), and which consists of about 1,275 acres of land within the Black Hills National Forest. The proposed boundary revision, as shown on the map referred to in the bill, will add lands to, and exclude lands from, the national monument. The total amount of land within the national monument, however, will remain at approximately 1,275 acres.

Recent exploration has uncovered over 13 miles of hitherto unknown caverns in the Jewel Cave vicinity. The newly discovered sections contain numerous formations of scenic and scientific interest. Among them are two unique mineral deposits—scintillites and hydromagnesite bubbles. Scintillites are quartz bodies which have been dissolved and re-formed into a material resembling a bowlful of spaghetti or coral in both color and form. They have a drusy quartz appearance which gives a dazzling sparkle to the formation. The hydromagnesite

"bubbles", are small translucent sacs of mineral deposit formed on some calcite popcorn. Experts are still puzzled as to how they are formed; it appears that they have not been previously described.

The large rooms and passageways with a coating of large calcite crystals and delicate dripstone formations in recently discovered sections give Jewel Cave a much greater significance. Here may be found rooms as large as 100 to 150 feet in length, with ceilings 75 feet high. Dogtooth spar lines vugs--the jewels from which the cave derives its name--are displayed in breathtaking fashion. An unusual geologic story is exhibited in several flowstone and dripstone formations which were at one time fractured, probably by an earthquake, and later "healed" by additional deposition. Other interesting new features found in the cave are hollow stalagmites. These standing columns covered with a coating of popcorn calcite are not commonly found in other caves in the country. These and other features occur in abundance and in many colors which makes Jewel Cave a fascinating attraction.

At the present time, the new portions of the cave can only be entered by those expert in cave exploration. With the cooperation of the Department of Agriculture, test holes have been drilled and suitable locations for an elevator shaft and a tunnel entry have been selected.

Since the boundary revision proposed under H.R. 9417 encompasses Federal lands within the Black Hills National Forest, no land acquisition cost would be attributable to this legislation. Lands excluded from the National Monument, amounting to about 1,120 acres, will remain and be administered as part of the national forest.

Since the newly discovered portions of Jewel Cave cannot be reached by the general public from the present entrance, developments are required. Based on current estimates and assumptions, the development costs will be approximately \$1,645,700. Under a memorandum of understanding entered into by the Forest Service, Department of Agriculture, and the National Park Service of this Department on February 9, 1965, pursuant to the act of August 7, 1946 (60 Stat. 885), \$660,100 of the estimated development costs have been appropriated to date. Annual operating costs presently amount to about \$35,000, and we estimate that when the new development is completed these costs will be approximately \$95,000.

The Bureau of the Budget has advised that there is no objection to the presentation of this report from the standpoint of the administration's program.

Sincerely yours,

STANLEY A. CAIN,
Assistant Secretary of the Interior.

DEPARTMENT OF AGRICULTURE,
Washington, D.C., September 19, 1965:

HON. WAYNE N. ARPSALL,
*Chairman, Committee on Interior and Insular Affairs,
House of Representatives.*

DEAR MR. CHAIRMAN: This is in response to your request of July 29, 1965, for a report on H.R. 9417, a bill to revise the boundary of Jewel Cave National Monument in the State of South Dakota, and for other purposes.

We recommend that this bill be enacted.

H.R. 9417 would revise the boundaries of the Jewel Cave National Monument, established by Proclamation 799 of February 7, 1908 (35 Stat. 2480), to include within it significant caverns and other geological features which now underlie national forest lands within the Black Hills National Forest. Lands in the revised monument would be administered by the National Park Service in accordance with the act of August 25, 1916 (39 Stat. 535), as amended and supplemented. Lands excluded from the monument would remain and be administered as part of the Black Hills National Forest. The revised boundaries would be those shown on drawing No. N.M.-J.C.-7100 dated June 10, 1964, and on file in the National Park Service of the Department of the Interior.

The present national monument includes 1,274.56 acres, being the S $\frac{1}{2}$ sec. 34 and S $\frac{1}{2}$ sec. 35, T. 3 S., R. 2 E., and N $\frac{1}{2}$ sec. 2 and N $\frac{1}{2}$ sec. 3, T. 4 S., R. 2 E., Black Hills base and meridian. These lands are reserved also for national forest purposes, but the withdrawal as a national monument is the dominant reservation. Since 1933, the monument has been administered by the National Park Service.

The effect of the revision provided by H.R. 9417 will be to move the monument east and south to include the S $\frac{1}{2}$ S $\frac{1}{2}$ sec. 36, T. 3 S., R. 2 E., and sec. 1, SE $\frac{1}{4}$ and part of NE $\frac{1}{4}$ sec. 2, and N $\frac{1}{2}$ N $\frac{1}{2}$ sec. 12, T. 4 S., R. 2 E., about 1,275 acres.

Recent explorations of the caves which supposedly underlain the Jewel Cave National Monument indicate that the principal caverns lie to the east and south of most of the monument as established by the 1908 proclamation and are within the revised boundaries as set forth on the drawing noted in H.R. 9417. National Park Service investigations also show that the most favorable locations for entrance points to the caves and for facilities and structures for the accommodation of visitors and administration of the national monument are in Lithograph Canyon, within sec. 1 T. 4 S., R. 2 E. Revision of the national monument boundary as proposed in the bill therefore would assure that the monument encompasses the area traversed by the caves and would facilitate development and administration of them.

The lands within both the present monument and the proposed revision are owned by the United States, having been reserved from the public domain. Both areas are timbered, largely with ponderosa pine. Timber in the present monument area is mostly old growth. The lands within the proposed revision support well-stocked, pole-size stands mostly. Grazing values are small and the revision would have no significant impact on national forest grazing permittees. The Forest Service would resume the administration of the lands excluded from the present monument by the revision with full regard

for their proximity to the revised monument area and public use thereof.

We believe that enactment of H.R. 9117 will promote more effective and efficient use of both the underground caverns, which are of public and scientific interest, and of the timber and other surface resources.

The Bureau of the Budget advises that there is no objection to the presentation of this report from the standpoint of the administration's program.

Sincerely yours,


ORVILLE L. FREEMAN,
Secretary.

COMMITTEE RECOMMENDATION

The Committee on Interior and Insular Affairs recommends the enactment of H.R. 9117.

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Clemson University



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